

WHAT IS CLAIMED IS:

1           1. A system for increased data transfer rate comprising:  
2           at least one buffer, the at least one buffer receiving a digital signal waveform, the  
3           digital signal waveform containing one bit of information for every bit time of the digital  
4           signal waveform, the at least one buffer buffering every three bits of the digital signal  
5           waveform; and

6           an encoder, the encoder encoding every buffered three bits of the digital signal  
7           waveform producing an encoded waveform that contains three bits of information for  
8           each bit time of the digital signal waveform, the encoding increasing the data transfer  
9           rate of the digital signal waveform.

1           2. The system according to claim 1, further comprising a decoder, the decoder  
2           decoding the encoded waveform producing three bits of the digital signal waveform  
3           containing one bit of information for every bit time of the digital signal waveform.

1           3. The system according to claim 2, further comprising a second buffer, the  
2           second buffer receiving the digital signal waveform produced from the decoder.

1           4. The system according to claim 1, further comprising at least one driver device  
2           operably connected to the encoder and at least one receiver device operably connected  
3           to the decoder, the at least one driver device transferring the encoded waveform across  
4           a transmission medium to the at least one receiver.

1           5. The system according to claim 1, wherein the buffered three bits of the digital  
2 signal waveform are '000', the encoded waveform comprising two sections where the  
3 first section is at a zero level and the second section is at a zero level.

1           6. The system according to claim 1, wherein the buffered three bits of the digital  
2 signal waveform comprise '001', the encoded waveform comprising two sections where  
3 the first section is at a zero level and the second section is a negative pulse.

1           7. The system according to claim 1, wherein the buffered three bits of the digital  
2 signal waveform comprise '010', the encoded waveform comprising two sections where  
3 the first section is a negative pulse and the second section is at a zero level.

1           8. The system according to claim 1, wherein the buffered three bits of the digital  
2 signal waveform comprise '011', the encoded waveform comprising two sections where  
3 the first section is a negative pulse and the second section is a negative pulse.

1           9. The system according to claim 1, wherein the buffered three bits of the digital  
2 signal waveform comprise '100', the encoded waveform comprising two sections where  
3 the first section is a positive pulse and the second section is a negative pulse.

1           10. The system according to claim 1, wherein the buffered three bits of the  
2 digital signal waveform comprise '101', the encoded waveform comprising two sections  
3 where the first section is at a zero level and the second section is a positive pulse.

1           11. The system according to claim 1, wherein the buffered three bits of the  
2 digital signal waveform comprise '110', the encoded waveform comprising two sections  
3 where the first section is a positive pulse and the second section is at a zero level.

1           12. The system according to claim 1, wherein the buffered three bits of the  
2 digital signal waveform comprise '111', the encoded waveform comprising two sections  
3 where the first section is a positive pulse and the second section is a positive pulse.

1           13. A method for increasing data transfer rate comprising:  
2 receiving a digital signal waveform, the digital signal waveform containing one  
3 bit of information for every bit time of the digital signal waveform;  
4 buffering the digital signal waveform three bit at a time;  
5 encoding each buffered three bits of the digital signal waveform producing an  
6 encoded waveform of the buffered three bits of the digital signal waveform that contains  
7 three bits of information for each bit time of the digital signal waveform, the encoding  
8 increasing the data transfer rate of the digital signal waveform.

1           14. The method according to claim 13, further comprising sending the encoded  
2 waveform from a first device to a second device across a transmission medium.

1           15. The method according to claim 14, further comprising:  
2 receiving the encoded waveform at the second device;

3 decoding the encoded waveform at the second device, the decoding producing  
4 three bits of the digital signal waveform containing one bit of information for every bit  
5 time of the digital signal waveform.

1 16. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '000', the encoded waveform comprising two sections  
3 where the first section is at a zero level and the second section is at a zero level.

1 17. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '001', the encoded waveform comprising two sections  
3 where the first section is at a zero level and the second section is a negative pulse.

1 18. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '010', the encoded waveform comprising two sections  
3 where the first section is a negative pulse and the second section is at a zero level.

1 19. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '011', the encoded waveform comprising two sections  
3 where the first section is a negative pulse and the second section is a negative pulse.

1 20. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '100', the encoded waveform comprising two sections  
3 where the first section is a positive pulse and the second section is a negative pulse.

1           21. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '101', the encoded waveform comprising two sections  
3 where the first section is at a zero level and the second section is a positive pulse.

1           22. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '110', the encoded waveform comprising two sections  
3 where the first section is a positive pulse and the second section is at a zero level.

1           23. The method according to claim 13, wherein the buffered three bits of the  
2 digital signal waveform comprise '111', the encoded waveform comprising two sections  
3 where the first section is a positive pulse and the second section is a positive pulse.

1           24. A method for encoding comprising at least one of:  
2 encoding three bits comprising '000' of a digital signal waveform into an encoded  
3 waveform comprising two sections where the first section is at a zero level and the  
4 second section is at a zero level;

5 encoding three bits of a digital signal waveform comprising '001' into an encoded  
6 waveform comprising two sections where the first section is at a zero level and the  
7 second section is a negative pulse;

8 encoding three bits of a digital signal waveform comprising '010' into an encoded  
9 waveform comprising two sections where the first section is a negative pulse and the  
10 second section is at a zero level;

11 encoding three bits of a digital signal waveform comprising '011' into an encoded  
12 waveform comprising two sections where the first section is a negative pulse and the  
13 second section is a negative pulse;

14 encoding three bits of a digital signal waveform comprising '100' into an encoded  
15 waveform comprising two sections where the first section is a positive pulse and the  
16 second section is a negative pulse;

17 encoding three bits of a digital signal waveform comprising '101' into an encoded  
18 waveform comprising two sections where the first section is at a zero level and the  
19 second section is a positive pulse;

20 encoding three bits of a digital signal waveform comprising '110' into an encoded  
21 waveform comprising two sections where the first section is a positive pulse and the  
22 second section is at a zero level; and

23 encoding three bits of a digital signal waveform comprising '111' into an encoded  
24 waveform comprising two sections where the first section is a positive pulse and the  
25 second section is a positive pulse, and

26 wherein the encoding increases the data transfer rate of the digital signal  
27 waveform.

1 25. The method according to claim 24, further comprising buffering each three  
2 bits of the digital signal waveform before the encoding.

1 26. A method for decoding comprising at least one of:

2 decoding an encoded waveform comprising two sections where the first section  
3 is at a zero level and the second section is at a zero level into three bits of a digital  
4 signal waveform comprising '000';

5 decoding an encoded waveform comprising two sections where the first section  
6 is at a zero level and the second section is a negative pulse into three bits of a digital  
7 signal waveform comprising '001';

8 decoding an encoded waveform comprising two sections where the first section  
9 is a negative pulse and the second section is at a zero level into three bits of a digital  
10 signal waveform comprising '010';

11 decoding an encoded waveform comprising two sections where the first section  
12 is a negative pulse and the second section is a negative pulse into three bits of a digital  
13 signal waveform comprising '011';

14 decoding an encoded waveform comprising two sections where the first section  
15 is a positive pulse and the second section is a negative pulse into three bits of a digital  
16 signal waveform comprising '100';

17 decoding an encoded waveform comprising two sections where the first section  
18 is at a zero level and the second section is a positive pulse into three bits of a digital  
19 signal waveform comprising '101';

20 decoding an encoded waveform comprising two sections where the first section  
21 is a positive pulse and the second section is at a zero level into three bits of a digital  
22 signal waveform comprising '110'; and

23            decoding an encoded waveform comprising two sections where the first section  
24            is a positive pulse and the second section is a positive pulse into three bits of a digital  
25            signal waveform comprising '111'.

1            27. The method according to claim 26, further comprising buffering each three  
2            bits of the digital signal waveform after the decoding.